

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF PENNSYLVANIA

IN RE: MAXIM INTEGRATED	)	
PRODUCTS, INC. MDL No. 2354	)	Master Docket: Misc. No. 12-244
	)	MDL No. 2354
This Document Relates to: All Actions	)	
	)	Chief Judge Joy Flowers Conti
	)	
	)	

MEMORANDUM OPINION

CONTI, Chief District Judge

These are patent infringement cases, centralized in this court for coordinated and consolidated pretrial proceedings by order of the Panel on Multidistrict Litigation. (ECF No. 1.) Approximately twenty-five separate cases are currently proceeding at the miscellaneous number assigned to this MDL, 12-mc-244, to which all citations to the record refer. Prior to creation of the instant MDL, Maxim Integrated Products, Inc. (“Maxim”) sued ten companies in the United States District Court for the Eastern District of Texas alleging patent infringement, and four companies brought declaratory judgment actions against Maxim in federal district courts in Colorado, Kansas and Pennsylvania seeking declarations of non-infringement and invalidity of the same patents. (Id.) All of these, and the later-joined, cases involve five related patents owned by Maxim directed to electronically performing secure transactions. Maxim alleges that various smartphone software applications, or “Apps,” infringe its patents. The companies accused of infringement, including those that initiated litigation by bringing declaratory judgment actions, are collectively referred to by this court as the Opposing Parties (“OPs”).

Maxim specifically asserts that the OPs infringe five of its patents: United States Patent Nos. 5,805,702 (the “702 Patent”, ECF No. 610 at JX-1), 5,940,510 (the “510 Patent”, ECF No. 610 at JX-3), 5,949,880 (the “880 Patent”, ECF No. 610 at JX-5), 6,105,013 (the “013

Patent”, ECF No. 610 at JX-7), and 6,237,095 (the “‘095 Patent”, ECF No. 610 at JX-9). These patents are all related. (ECF No. 691 at 2.) The ‘880 Patent issued from a divisional application of the ‘510 Patent. (Id.) The ‘702 Patent, ‘013 Patent and ‘095 Patent date back to a common provisional application and share a substantially similar specification. (Id.) The ‘013 Patent and ‘095 Patent incorporate by reference the ‘510 Patent. The ‘510 Patent and ‘880 Patent incorporate by reference the ‘702 Patent. (Id.)

The parties submitted a joint disputed claim terms chart originally identifying forty-three terms requiring construction by the court, (ECF No. 580), but later indicated that eight of the forty-three disputes had been resolved following claim construction briefing (ECF No. 677-1). Maxim filed an opening claim construction brief (ECF No. 634), to which the OPs filed a consolidated response (ECF No. 642). Maxim thereafter filed a reply brief. (ECF No. 651.) A subset of the OPs, referred to as the Joining Parties (“JPs”), filed a separate claim construction brief with respect to a single disputed claim term, i.e., “certificate,” (ECF No. 680), to which Maxim responded (ECF No. 686). A hearing was held before the Special Master and the court on September 12, 2013 (the “September Hearing”). (ECF No. 709 (Transcript).) Following the September Hearing, Maxim filed a supplemental brief with respect to a single disputed claim term, i.e., “packet.” (ECF No. 687.)

On October 9, 2013, the Special Master filed a Report and Recommendation (“R&R”) regarding claim construction, (ECF No. 691), which was later modified only as to the disputed claim term “microcontroller core” to correct a typographical error in the R&R (ECF No. 693). The OPs (ECF No. 704), Maxim (ECF No. 705), and the JPs (ECF No. 713) filed objections to the Special Master’s R&R and responses to those objections (ECF Nos. 715, 714

and 718, respectively.) The court heard oral argument on the objections to the R&R on November 13, 2013 (the “November Hearing”). (ECF No. 726 (Transcript).)

The court reviewed the initial claim construction briefing and the briefing on the objections to the R&R and considered the arguments made and written materials submitted at the September and November Hearings and is prepared to issue its order on claim construction. In accordance with the court’s previous order on post-claim construction scheduling, (ECF No. 724), Maxim’s counsel is directed to file a version of that order listing dates certain for the various deadlines. The court will thereafter set a date for the Daubert hearing and post-discovery status conference.

## **I. LEGAL STANDARDS**

### **A. Generally Applicable Principles of Claim Construction**

Claim construction is a matter of law. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995). “It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1115 (Fed. Cir. 2004)). The words of a claim “are generally given their ordinary and customary meaning,” which “is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” Id. at 1312-13 (citing Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed Cir. 1996)); Innova/Pure Water, 381 F.3d at 1116. In arriving at this meaning, a court is to look first and foremost to the “intrinsic evidence,” which consists of the patent’s claim language, the specification and written description, and the

prosecution history, to determine the meaning of disputed claim terms. Phillips, 415 F.3d at 1311-17; Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005). The specification is the single best guide to the meaning of a disputed term, and is “usually...dispositive.” Phillips, 415 F.3d at 1315 (quoting Vitronics, 90 F.3d at 1582).

Claim language guides the court’s construction of claim terms. Phillips, 415 F.3d at 1314. Yet, the “claims cannot enlarge what is patented beyond what the inventor has described as the invention.” Abbott Laboratories v. Sandoz, Inc., 566 F.3d 1282, 1288 (Fed. Cir. 2009) (citing Biogen, Inc. v. Berlex Labs., Inc., 318 F.3d 1132, 1140 (Fed. Cir. 2003)). The context in which a term is used not only in the asserted claims, but also in any claims that are not being asserted in a particular lawsuit, can be highly instructive because “terms are normally used consistently throughout the patent.” Phillips, 415 F.3d at 1314. “The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” Renishaw PLC v. Marposs Societa per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998). Differences among claims, such as additional limitations in dependent claims, can provide further guidance. The doctrine of claim differentiation provides that the presence of a dependent claim that adds a particular limitation raises a rebuttable presumption that the limitation in question is not found in the independent claim. Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., 239 F.3d 1225, 1233 (Fed. Cir. 2001). Although the doctrine is at its strongest “where the limitation sought to be ‘read into’ an independent claim already appears in a dependent claim,” there is still a presumption that two independent claims have different scope when different words or phrases are used in those claims. Seachange Int’l Inc., v. C-COR, Inc., 413 F.3d 1361, 1368 (Fed. Cir. 2005) (citing cases). “However, the doctrine, ‘only

creates a presumption that each claim in a patent has a different scope.” Id. at 1369 (quoting Kraft Foods, Inc. v. Int’l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000)).

Claims are always to be read in view of the specification, of which they are a part. Markman, 52 F.3d at 979. “The person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” Phillips, 415 F.3d at 1313. Moreover, “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone” the specification can provide clarity. Teleflex, Inc. v. Ficoso N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002). In the specification, a patentee may define his own terms, give a claim term a different meaning than it would otherwise possess, or disclaim or disavow some claim scope. Id. at 1316. Although a court generally presumes terms possess their ordinary meaning, this presumption can be overcome by statements of clear disclaimer, SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1343-44 (Fed. Cir. 2001), or when the patentee acts as his own lexicographer. Irdeto Access, Inc. v. EchoStar Satellite Corp., 383 F.3d 1295, 1301 (Fed. Cir. 2004).

“Although the specification may aid the court in interpreting the meaning of disputed language in the claims, particular embodiments and examples appearing in the specification will not generally be read into the claims.” Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1571 (Fed. Cir. 1988); see also Phillips, 415 F.3d at 1323. Nonetheless, “[a] claim interpretation that excludes a preferred embodiment from the scope of the claim ‘is rarely, if ever, correct.’” Globetrotter Software, Inc. v. Elam Computer Grp. Inc., 362 F.3d 1367, 1381 (Fed. Cir. 2004) (quoting Vitronics Corp., 90 F.3d at 1583). Even if a patent describes only a

single embodiment, the claims of the patent must not be construed as being limited to that embodiment unless the patentee has demonstrated a clear intention to limit the claim scope using “words or expressions of manifest exclusion or restriction.” Phillips, 415 F.3d at 1323; Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004) (citing cases); Teleflex, 299 F.3d at 1327. The purpose of the specification is “to teach and enable those of skill in the art to make and use the invention” and sometimes, the best way to do that is to provide an example. Teleflex, 299 F.3d at 1327. Although the Court of Appeals for the Federal Circuit acknowledges that “the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice,” it instructs courts to maintain their focus on how a person of ordinary skill in the art would understand the claim terms. Id.

The prosecution history is another tool that supplies the proper context for claim construction. Home Diagnostics Inc. v. LifeScan, Inc., 381 F.3d 1352, 1356 (Fed. Cir. 2004). Because the file history “represents an ongoing negotiation between the [United States Patent and Trademark Office (“PTO”)] and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful in claim construction proceedings.” Phillips, 415 F.3d at 1317. Nevertheless, the prosecution history is intrinsic evidence that is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims. Id. Where an applicant limits claim scope during prosecution through a “clear disavowal of claim coverage, such as an amendment to overcome a rejection,” the well-established doctrine of prosecution disclaimer “preclud[es] patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution.” Amgen Inc. v. Hoechst

Marion Roussel, Inc., 314 F.3d 1313, 1327 (Fed. Cir. 2003) (citing York Prods., Inc. v. Central Tractor Farm & Fam. Ctr., 99 F.3d 1568, 1575 (Fed. Cir. 1996)); Omega Eng'g Inc. v. Raytek Corp., 334 F.3d 1314, 1323 (Fed. Cir. 2003). By distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover. Spectrum Int'l v. Sterilite Corp., 164 F.3d 1372, 1378-79 (Fed. Cir. 1988) (quotation omitted). In order for the doctrine to apply, however, the prosecution history must show that the patentee clearly, unambiguously and unmistakably disclaimed or disavowed the proposed interpretation during prosecution in order to obtain claim allowance. Middleton Inc. v. 3M Co., 311 F.3d 1384, 1388 (Fed. Cir. 2002); Cordis Corp. v. Medtronic AVE, Inc., 339 F.3d 1352, 1358 (Fed. Cir. 2003); Schindler Elevator Corp. v. Otis Elevator Co., 593 F.3d 1275, 1285 (Fed. Cir. 2010).

Phillips rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. Phillips, 415 F.3d at 1319-24. Still, though “less significant than the intrinsic record in determining the legally operative meaning of claim language,” a court may rely on extrinsic evidence to “shed useful light on the relevant art.” Id. at 1317 (quotation omitted). Technical dictionaries and treatises may help the court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but such sources may also provide overly broad definitions or may not be indicative of how terms are used in the patent. Id. at 1318. Similarly, expert testimony may aid the court in determining the particular meaning of a term in the pertinent field, but “conclusory, unsupported assertions by experts as to the definition of a claim term are not useful.” Id. Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” Id.

## **B. Indefiniteness**

Patent claims must particularly point out and distinctly claim the subject matter regarded as the invention. 35 U.S.C. § 112, ¶ 2. Whether a claim meets this definiteness requirement is a question of law. Amgen Inc. v. F. Hoffman–LA Roche Ltd., 580 F.3d 1340, 1371 (Fed. Cir. 2009); Young v. Lumenis, Inc., 492 F.3d 1336, 1344 (Fed. Cir. 2007). The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent so that interested members of the public, e.g., competitors of the patent owner, can determine whether or not they infringe. All Dental Prodx, LLC v. Advantage Dental Prods., Inc., 309 F.3d 774, 779–80 (Fed. Cir. 2002) (citing Warner–Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 28–29 (1997)). In other words, “[a] patent holder should know what he owns, and the public should know what he does not.” Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 731 (2002).

An accused infringer must demonstrate by clear and convincing evidence that one of ordinary skill in the relevant art could not discern the boundaries of the claim based upon the claim language, the specification, the prosecution history, and the knowledge in the relevant art in order to meet the “exacting standard” to prove indefiniteness. Halliburton Energy Servs., Inc. v. M-I LLC, 514 F.3d 1244, 1249-50 (Fed. Cir. 2008). “Only claims ‘not amenable to construction’ or ‘insolubly ambiguous’ are indefinite.” Id. at 1250 (quoting Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005)). Where “one skilled in the art would understand the bounds of the claim when read in light of the specification” the claim is sufficiently definite. Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001). The ultimate issue is whether someone working in the relevant technical field could



understand the bounds of a claim. Haemonetics Corp. v. Baxter Healthcare Corp., 607 F.3d 776, 783 (Fed. Cir. 2010). Where “the meaning of a claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree,” the claims are sufficiently clear to avoid invalidity on indefiniteness grounds. Exxon Research, 265 F.3d at 1375. This approach “accord[s] respect to the statutory presumption of patent validity....and...protect[s] the inventive contribution of patentees, even when the drafting of their patents has been less than ideal.” 35 U.S.C. § 282; Datamize, 417 F.3d at 1347–48.

## **II. CONSTRUCTION OF DISPUTED CLAIM TERMS**

For ease of reference, the court addresses the disputed claim terms in the order that they appear in the R&R, (ECF No. 691), and by reference to the number assigned to the claim term by the Special Master. The court discusses each disputed claim term, or group of closely related terms, in a separate section below. Each section begins with an individual claim construction chart that lists, in the first column, the number assigned to the term by the Special Master in the R&R. The second column of each chart recites the disputed claim term and makes parenthetical reference, following the claim term, to the number at which that disputed claim term appeared in the parties’ joint disputed claim terms chart. (ECF No. 677-1.) Each individual claim construction chart next includes a column listing the patent number and claim number at which the disputed claim term is found, followed by this court’s claim construction in the last column.

The court uses bold typeface where its construction differs from, or adds to, the Special Master’s recommended construction. In some instances, the court suggests, in footnotes, curative jury instructions that may be required under certain circumstances. The court does so in

order to recognize that this is an MDL proceeding, and that this court may not preside over the jury trial in a particular case. By doing so, the court does not indicate that any party is authorized purposefully to submit evidence or present argument that contradicts this court’s claim construction. The court, however, includes these curative instructions out of an abundance of caution and for the purpose of ensuring clarity when the cases centralized here are returned to their home courts.

#### A. First Claim Construction Chart

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
1(a)	“first data” (#12)	‘510/1	no construction required
1(a)	“first data” “second data” (#12)	‘095/1	no construction required
1(b)	“units of exchange” (#34)	‘880/1	no construction required
1(b)	“value datum” (#34)	‘880/1	data that can be exchanged <del>for</del> <b>payment</b> for goods and services, the data representing a value for money, credit or other items
1(c)	“first portable module” (#13)	‘510/1	no construction required

Very generally, the disputes concerning each of these terms center on whether the patent claims are limited only to monetary transactions. The court agrees with the Special Master’s fundamental conclusion that although the ‘880 Patent’s “value datum” term indicates a monetary, or other credit, transaction, the other terms, and patents, are not so limited.

The OPs object to the Special Master’s conclusion that the terms “first data,” “second data” and “first portable module” need not be construed, and are not limited to monetary transactions. (ECF No. 704 at 3-7.) The OPs’ arguments that the ‘095 and ‘510 Patents must be limited to transactions that involve cash, or cash equivalents, are not persuasive.

The Special Master explained that the doctrine of claim differentiation, the permissive language used in the claims and the rest of the specification, and the file history of the ‘095 Patent demonstrate that the claims of the ‘095 Patent are not limited to cash exchanges. (ECF No. 691 at 13-14). The court agrees with this analysis and adopts it.

With respect to the ‘510 Patent, the court rejects the OPs’ argument that the patentees redefined the term “data” to mean “monetary value” because the patent lacks a legally sufficient clear statement of lexicography. Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388 (Fed. Cir. 1992); (ECF No. 691 at 14-15.) The OPs’ lexicographer argument is also contradicted explicitly by the ‘510 Patent’s file history. During prosecution of the ‘510 Patent, the PTO examiner identified two distinct inventions in the originally filed claims of the ‘510 Patent; one directed toward “a system for communicating data securely,” and one directed toward “a method for electronically transferring units of exchange.” (ECF No. 610 at JX-4, 244MAX001038-43, 1071.) The “system for communicating data securely” invention became the ‘510 Patent, while the “method for electronically transferring units of exchange” invention became the ‘880 Patent. The court cannot conclude that the patentees defined “data” in the ‘510 Patent to mean “monetary value” in the context of this file history. Finally, under controlling precedent, this court cannot limit the claims of the ‘510 Patent to a preferred embodiment, even if there is only one, unless the patentee demonstrated a clear intention to limit the claim scope using “words or expressions of manifest exclusion or restriction.” Teleflex, 299 F.3d at 1327. Again, in the entire context of the ‘510 Patent, the court cannot conclude that the patentees demonstrated such a clear intention to limit their claims. Based upon the ‘510 Patent’s specification and file history, which claims the broader invention directed toward “a system for

communicating data securely,” the court cannot conclude that the ‘510 Patent is limited to monetary transactions. (ECF No. 691 at 13-14, 15.)

In addition, the incorporation by reference in the ‘510 Patent of the ‘702 Patent supplies further support for the conclusion that the ‘510 Patent does not manifest an intent to exclude non-monetary embodiments. (ECF No. 610 at JX-3, 1:7-16.)<sup>1</sup> The ‘702 Patent includes numerous embodiments that are unrelated to monetary transactions. (Id. at JX-1, 4:45-7:50, 13:51-16:19.) For the first time in their objections to the R&R, the OPs argue that the patentees’ statement of incorporation is ineffective and, that, even if it were proper, an incorporated patent cannot be considered for purposes of construing the terms of the host patent. (ECF No. 704 at 6.) The court disagrees. As an initial matter, the statement of incorporation in the ‘510 Patent meets the standards and requirements set forth in the applicable regulations and PTO procedures. 37 C.F.R. § 1.57(c); Manual of Patent Examining & Procedure (MPEP), 6<sup>th</sup> ed. §§ 608.01(p), 2163.07(b) (Sep. 1995); Dealertrack, Inc. v. Huber, 674 F.3d 1315, 1323 (Fed. Cir. 2012). It follows that the ‘702 Patent “is as much a part of the [‘510 Patent] as if the text was repeated in [the ‘510 Patent].” MPEP § 2163.07(b).

None of the decisions cited by the OPs, in either their briefing or in the materials submitted at the November Hearing, indicate that this court is prohibited from considering the ‘702 Patent in construing the claims of the ‘510 Patent. Young Dental Mfg. Co. v. Q3 Special Prods., 112 F.3d 1137, 1143 (Fed. Cir. 1997) (distinguishable at least because the court addressed differing specifications in a parent and continuation-in-part patent); SanDisk Corp. v. Kingston Tech. Co., 695 F.3d 1348, 1366 (Fed. Cir. 2012) (distinguishable at least because the court addressed how the disclosure-dedication rule applied to incorporated subject matter);

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<sup>1</sup> Citations to patents are made in the format [column number]:[line number], unless otherwise specified.

Modine Mfg. Co. v. ITC, 75 F. 3d 1545, 1552 (Fed. Cir. 1996) (distinguishable at least because the host patent explicitly replaced value assigned to the term in controversy in the incorporated patent with a different value); Zenon Env't, Inc. v. United States Filter Corp., 506 F.3d 1370, 1378-1379 (Fed. Cir. 2007) (distinguishable at least because the court addressed effect of language of incorporation that was specific, instead of general); Helicos Biosciences Corp. v. Illumina, Inc., 888 F.Supp. 2d 519, 533 (D. Del. 2012) (not controlling authority and distinguishable at least because the court addressed effect of incorporated subject matter on anticipation analysis); Biogen Idec, Inc. v. GlaxoSmithKline LLC, 713 F.3d 1090, 1097 (Fed. Cir. 2013) (distinguishable at least because prosecution history disclaimer applied). The various non-monetary embodiments described in the '702 Patent can be considered in construing the terms of the '510 Patent and support the conclusion that the '510 Patent is not limited to monetary transactions.

Once the OPs' arguments in favor of limiting the claims of the '510 and '095 Patents to monetary exchange transactions are rejected, it follows that the terms "first data," "second data" and "first portable module" need no further construction. The jury will be well-equipped to understand each of these terms as they are used in the context of the asserted claims of the patents.

The analysis with respect to the terms "value datum" and "units of exchange" in the '880 Patent is different. To be clear at the outset, the OPs have not objected to the Special Master's construction of "value datum," (ECF No. 704), and Maxim has done so only by way of reference to its initial claim construction briefing, in which it contended that the term need not be construed at all (ECF No. 634 at 57-59; ECF No. 705 at 8). Maxim does not object to the Special Master's failure to construe the term "units of exchange," (ECF No. 705), and the OPs

do so only by way of a chart incorporating their initial claim construction briefing. (ECF No. 704-1.)

With respect to the term “value datum” the original dispute between the parties was whether the term must constitute legal tender itself, or merely represent a unit of exchange. (ECF No. 691 at 16-19.) The Special Master concluded that “value datum” could be a representation of money, or some other form of credit, but had to be exchangeable for goods or services. (Id. at 21.) The parties are largely in agreement with the Special Master’s recommended construction, and the court adopts it, in large part. The record indicates that the “value datum” must be exchangeable, but need not necessarily be, or represent only, cash, as opposed to some other form of credit. The court has removed the words “as payment” from the Special Master’s recommended construction in order to avoid any possible unintended implication that the term is limited to transactions in which cash is directly exchanged for goods or services.

The Special Master concluded that the term “units of exchange” need not be construed because it is found in the preamble and is non-limiting with respect to the subsequent steps of the method claim. (Id. at 19-20.) The court reviewed the OPs’ original arguments about the term “units of exchange,” but agrees with the Special Master’s conclusion that the term need not be construed, for the reasons set forth in the R&R.

## B. Second Claim Construction Chart

<b>R&amp;R#</b>	<b>Term (Chart #)</b>	<b>Patent/Claim</b>	<b>Construction</b>
2	“portable module reader that can be placed in communication with said first portable module” (#21)	‘510/1	<b>no construction required</b>

The Special Master recommended that this term be construed to mean “a device that can be placed in communication with the first portable module to read data from the portable module.” (ECF No. 691 at 26-27.) The OPs object to the Special Master’s construction, which rejects their argument that the phrase “placed in communication with” requires that two items physically touch or at least be in close proximity to each other. (ECF No. 704 at 16-18.) The court agrees with the Special Master’s conclusion that the ‘510 Patent does not require proximity or physical touching of the “first portable module” and the “portable module reader.” The specifications of the ‘510 Patent and the ‘702 Patent<sup>2</sup> describe various ways that these two items can communicate, which include use of a wireless communication system or a network. (ECF No. 610 at JX-3, 2:45-58; JX-1, 11:42-59.) The phrase “placed in communication with” is related to and derivative of those forms of communication, and the OPs failed to convince the court otherwise.

Although “placed” can indicate physical contact between two items, e.g., “she placed the glass on the table,” it need not only refer to physical contact; e.g., “the real estate broker placed the buyers in contact with a reputable contractor.” Notably, the phrase used in the patents is actually “placed in communication with.” Communication does not inherently require physical contact or even proximity, and the patents acknowledge and disclose this precise

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<sup>2</sup> The court already determined that the ‘702 Patent is properly incorporated into the ‘510 Patent and is relevant to its claim construction. See Section II.A, p. 11-13.

concept by making reference to networks and wireless systems. The intrinsic record does not limit the term to forms of communication that require physical contact or proximity.

The court considered the OPs' prosecution history disclaimer argument, and finds that the statements referenced do not rise to the level of clear and unmistakable disavowals. (ECF No. 704 at 18-19.) In order for the doctrine to apply, the prosecution history must show that the patentee clearly, unambiguously, and unmistakably disclaimed or disavowed the proposed interpretation during prosecution in order to obtain claim allowance. Schindler Elevator, 593 F.3d at 1285; Cordis, 339 F.3d at 1358; Middleton, 311 F.3d at 1388. The November 8, 1998 amendment's general reference to "locations that have a portable module reader" and its replacement of "able to communicate with" with "placed in communication with" do not reflect that the patentees limited their invention to physical proximity between the portable module and the portable module reader in order to obtain allowance. (ECF No. 704 at 18-19.) The OPs failed to meet the requirements for applying prosecution history disclaimer.

Although the court agrees with the Special Master's analysis, the court finds that a jury would not require any special construction of this phrase in order to decide questions of infringement or invalidity.<sup>3</sup> The phrase will be readily understandable to a jury in the context of the related claim language. The court's differing approach to construction of this term from the Special Master's recommendation is noted in bold typeface, for ease of reference only, in the above individual claim construction chart. The Special Master's analysis is otherwise adopted by the court.

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<sup>3</sup> If a party at trial argues contrary to this analysis, the jury should be instructed that the word "placed" is not limited to any degree of proximity or to physical contact.



### C. Third Claim Construction Chart

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
3	“microcontroller” (#16)	‘510/1 ‘013/1&9	an integrated hardware circuit including a processor, memory and input/output

Maxim objects to the Special Master’s recommended construction, but only by way of incorporation of its original claim construction briefing. (ECF No. 705 at 8.) Similarly, the OPs object only by way of a chart attached as an appendix to their objection brief, which likewise incorporates their original claim construction briefing. (ECF No. 704-2.) The original disputes regarding construction of this term were whether the microcontroller of the ‘510 and ‘013 Patents must: (1) be on a single integrated circuit; and (2) be used for a single purpose or application. The Special Master answered the first question in the affirmative and the second question in the negative. (ECF No. 691 at 29-30.) Nothing in the parties’ initial briefing convinces the court that the Special Master erred.

The court agrees with the Special Master’s analysis and conclusion, and adopts them without modification.<sup>4</sup>

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<sup>4</sup> If a party at trial argues contrary to this analysis and construction, the jury should be instructed that the microcontroller could be either a general purpose microcontroller capable of being used for more than one application, or a single purpose microcontroller.

#### D. Fourth Claim Construction Chart

<b>R&amp;R#</b>	<b>Term (Chart #)</b>	<b>Patent/Claim</b>	<b>Construction</b>
4	“math coprocessor...for processing encryption calculations” (#7)	‘510/1	a processor that works with another processor processing complex mathematics of encryption
4	“math coprocessor...for handling complex mathematics of encryption and decryption” (#7)	‘013/1	a processor that works with another processor handling complex mathematics of encryption and decryption
4	“modular exponentiation accelerator circuit...for performing encryption and decryption calculations” (#8)	‘013/9	a processor that works with another processor <b>performing</b> complex mathematics of modular exponentiation <b>for</b> encryption and decryption
4	“coprocessor circuit” (#6)	‘095/1	A processor that works with another processor

Maxim does not object to the Special Master’s recommended construction of these terms. The OPs object, but only by way of a chart attached as an appendix to their objection brief that incorporates their original claim construction briefing. (ECF No. 704-1.) In short, the OPs contend that these coprocessors must be distinct from and run concurrently with another processor. (ECF No. 642 at 31-33.) The Special Master rejected both of these positions and the court adopts the reasoning set forth in the R&R. (ECF No. 691 at 35.)<sup>5</sup>

The OPs’ remaining arguments are that all referenced coprocessors must be dedicated to performing modular exponentiation for the purpose of encryption and decryption. (ECF No. 642 at 33-36.) The Special Master properly rejected these arguments, concluding that claim differentiation applied and prosecution history disclaimer did not. (ECF No. 691 at 34-36.) The Special Master also accurately considered the structure and content of the specifications in

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<sup>5</sup> If a party at trial argues contrary to this analysis and these claim constructions, the jury should be instructed that the circuitry of the math coprocessor, the modular exponentiation accelerator circuit, and the coprocessor circuit need not be structurally distinct from any other processor.

construing these terms. (Id.) The OPs’ original briefing provides no reason for this court to disagree with the Special Master’s analysis or conclusion.

Therefore, the court adopts the Special Master’s recommended construction of these terms, with slight modification to the third term for purposes of consistency, as noted with bold typeface in the above individual claim construction chart only for ease of reference.

#### **E. Fifth Claim Construction Chart**

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
5	“real time clock circuit” (#22)	‘510/1	continuously running clock circuit that tracks time
5	“real time clock” (#22)	‘013/1	continuously running clock circuit that tracks time
5	“clock circuit” (#22)	‘013/9	circuitry that tracks time
5	“timing circuit” (#22)	‘095/1	circuitry that tracks time

Maxim does not object to the Special Master’s recommended constructions of these terms. The OPs object, but only by way of a chart attached as an appendix to their objection brief, incorporating their original claim construction briefing. (ECF No. 704-1.) The original dispute between the parties concerned whether the clock circuitry of the asserted patents determined the “real-world date and time.” (ECF No. 691 at 37, 39.) The court re-reviewed the OPs’ original briefing on this point, including revisiting each of the OPs’ citations to the ‘510 and ‘013 Patents. (ECF No. 642 at 43-45 & nn. 37-39.) These references do not establish that real time clocks or clock circuitries must include a date. Instead, these references explain how these clocks/circuits are combined with other items to arrive at a “true time” or a “date/time stamp.”

The R&R aptly explains that “true time” is only obtained if the output of these clocks is combined with other items. The court agrees that the specifications include no requirement that the clocks output a date. (ECF No. 691 at 39-40.) The OPs’ arguments to the contrary are not supported by the intrinsic record, and are not persuasive. The Special Master’s recommended construction of these terms is adopted, without modification, by the court.

#### **F. Sixth Claim Construction Chart**

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
6	“memory circuitry which can be programmed by a service provider to enable” (#15)	‘013/1	memory circuitry capable of being programmed by a service provider to enable

Maxim and the OPs both object to the Special Master’s recommended construction of this term, but only by reference to their original claim construction briefing. (ECF Nos. 705 at 8 and 704-2.) The parties now agree that the term speaks to the “capability of being programmed.” The only remaining dispute, therefore, between the parties is whether the service provider must be the one to “load” programs into the memory circuitry. Again the court re-reviewed the OPs’ original briefing on this point, including revisiting each of the OPs’ citations to the ‘013 Patent. (ECF No. 642 at 56.) Although one reference discusses a preference that the service provider “load[] the module with data,” (ECF No. 610 at JX-7, 3:47-49), the balance of the patent, including the other references cited by the OPs, does not include this language.

The court concurs with the Special Master that there is no indication in the specification of the ‘013 Patent, or elsewhere in the intrinsic record, that the memory circuitry can only be programmed by the service provider “loading” a program into memory. (ECF No. 691 at 44.) To be clear, the claim explicitly requires that the memory circuitry be “programmed by a service provider” and to the extent Maxim’s original claim construction arguments sought to eliminate that requirement, the court concurs with the Special Master’s rejection of them. (ECF No. 634 at 24-26.) That being said, although the patent requires the service provider to program the memory, there is no restriction in the patent as to *how* the service provider goes about doing so. The court adopts the Special Master’s recommended construction of this term, without modification.

#### **G. Seventh Claim Construction Chart**

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
7	“counter for counting a transaction count” (#9)	‘510/1	no construction required
7	“transaction counter for counting a number of transactions that said apparatus performs” (#9)	‘095/6	no construction required

The OPs object to the Special Master’s failure to construe these terms beyond their ordinary meaning, and include substantive briefing on this objection, (ECF no. 704 at 14-15), to which Maxim responded, (ECF No. 715 at 17-19). The parties dispute whether the “counter” or “transaction counter” (collectively, “counters”) must be hardware, as opposed to software, and whether completed financial transactions are the only things being counted by the “counters.” The Special Master concluded that the “counters” need not be hardware and that completed financial transactions are not the only items being counted. The court agrees with the

Special Master’s analysis and conclusion with respect to the second issue, and adopts them. The court agrees with the Special Master’s first conclusion, but for slightly different reasons.

Addressing the second issue first, the court agrees that completed financial transactions are not the only things being counted by the “counters.” The specifications of the ‘510 and ‘095 Patents explicitly contradict the OPs’ contention that only successfully completed financial transactions are counted. (ECF No. 610 at JX-3, 10:36-39; JX-9, 18:22-24.) In these references, the “counter” increments by one whenever “a transaction script, which references this object, is invoked.” Moreover, as correctly noted by Maxim, neither the ‘095 Patent nor the ‘510 Patent is limited to implementing financial transactions. (ECF No. 610 at JX-9, 4:65-7:65, 12:34-13:7, 14:50-62; JX-3, 1:5-17 (incorporating the ‘702 Patent by reference).) The court agrees with the Special Master’s conclusion that the phrases “transaction count” and “counting a number of transactions” need not be further construed. (ECF No. 691 at 48-49.) The phrases will be understood, in context, by the jury. Finally, to the extent there is still some dispute between the parties about whether a “counter” must be irreversible, the court agrees with the Special Master’s rejection of that additional limitation; the specification of both patents is clear that only when a counter is locked does it become irreversible. (*Id.* at 48.) It follows that counters cannot be inherently irreversible.

The court’s analysis differs somewhat from the Special Master’s on the question whether the “counters” are hardware elements. The court reviewed the initial briefing, the R&R, the objection briefing, and the presentations accompanying the parties’ oral arguments and reached the same conclusion as the Special Master, albeit for slightly different reasons. The Special Master found that “counters” need not be hardware elements based upon four factors: (1) the absence of the word “circuitry” in connection with the “counters;” (2) the failure of the OPs

to demonstrate that software cannot be “in electrical communication” with hardware; (3) the language used in the specifications; and (4) the file history. (ECF No. 691 at 47.)

With respect to the Special Master’s first factor, the court does not reach the conclusion that the patentees invariably appended the term “circuit” to hardware elements. For example, the ‘510 Patent does not use the word “circuit” in connection with the terms “nonvolatile memory,” “microcontroller core,” or “math coprocessor.” (ECF No. 601 at JX-3, 24:4, 23-24.) The ‘095 Patent does not use the word “circuit” in connection with the terms “input/output interface” or “second memory.” (ECF No. 610 at JX-9, 32:62, 33:6.) All of these are hardware elements even though they are not described as “circuits.” The referenced file history reflecting that, at one time, one proposed claim included a “counter” while another included “counting circuitry” is diluted in light of the plain language and structure of the actual claims. (ECF No. 691 at 47.) On the face of the patents themselves, the word “circuitry” does not invariably modify a hardware element, making the absence of that term from the “counter” limitations non-dispositive. Therefore, this court does not adopt the Special Master’s reasoning with respect to the first and fourth factors.

The court agrees with the Special Master’s analysis of the third factor and also concludes that the language used in the specifications of the ‘510 Patent and the ‘095 Patent does not indicate that “counters” can only be hardware. Instead, the language indicates that “counters” can be either hardware or software. For instance, figure 2 of the ‘510 Patent reflects that item 206 is a piece of hardware. There, however, are voluminous instances in which software-related language is used to refer to “counters”, e.g., ECF No. 610 at JX-3, 6:10-13 (one object that can be defined within a transaction group is “Transaction Counter”), 10:33-40 (“Transaction Counter” is among list of valid exemplary objects); JX-9, 3:55-4:14 (one object

that can be defined within a transaction group is “Transaction Counter”), 7:19-20 (create a transaction sequence counter object initialized to zero), 13:10-25 (programmed into the module by creating a transaction counter object), 18:18-26 (“Transaction Counter” is among list of valid exemplary objects), fig. 4 at step B4 (create transaction sequence object (counter)), fig. 6 at step D1 (transaction count object). The R&R includes many of these citations. (ECF No. 691 at 47.) The only reasonable inference to be drawn from these references is that the “counters” could be either hardware or software.

With respect to the second factor relied on by the Special Master, the court agrees that the OPs’ argument that “in electrical communication” dictates a hardware-to-hardware connection is not substantiated. (ECF No. 691 at 47.) The OPs presented no reason, other than attorney argument, why a piece of electrical hardware and a software application cannot be in “electrical communication.” As the words would be commonly understood, it is difficult to comprehend how else software would communicate with anything. The phrase “electrical communication” does not dictate that the “counters” be hardware elements, as the OPs maintain.

Based upon the court’s independent consideration of the totality of the record, the court concludes that the ‘510 and ‘095 Patents do not limit “counters” to hardware.<sup>6</sup> The court agrees with the Special Master that these terms need not be further construed.

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<sup>6</sup> If a party at trial argues contrary to this analysis, the jury should be instructed that the “counters” can be either hardware or software.



## H. Eighth Claim Construction Chart

<b>R&amp;R#</b>	<b>Term (Chart #)</b>	<b>Patent/Claim</b>	<b>Construction</b>
8	“time stamp” (#28)	‘095/1	an indication of at least the time
8	“time stamp information” (#28)	‘013/9	information indicating at least the time

Maxim does not object to the Special Master’s recommended constructions of these terms. The OPs object, but only by way of incorporating their original claim construction briefing by reference. (ECF No. 704-1.) Originally, the OPs argued that the “time stamps” must be stored or recorded and must always include both time and date information, while Maxim argued that “time stamps” could be comprised only of date information. (ECF No 691 at 50-52.) The court agrees with the Special Master’s analysis of the issues and likewise concludes that there is no requirement that the information be stored or recorded and that there is no support for either Maxim’s proposed construction that a “time stamp” can be comprised of only a date, or the OPs’ proposed construction that both the date and the time are required.<sup>7</sup>

The court agrees with the Special Master’s recommended construction of these terms.

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<sup>7</sup> If a party at trial argues contrary to this analysis, the jury should be instructed that the time indication/information need not be stored or recorded.

## **I. Ninth Claim Construction Chart**

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
9	“time stamping data transactions” (#29)	‘510/1	applying at least the time to a data transaction

Both Maxim and the OPs object to the Special Master’s recommended construction of this term, but do so only by reference to their original claim construction briefing. (ECF Nos. 704-2 and 715 at 8.) Both parties’ arguments are generally derivative of those made immediately above in reference to the “time stamp” terms, and the Special Master’s recommended construction is likewise derivative. The Special Master’s recommended construction simply adds language acknowledging that “time stamping” is now used as a verb in reference to a specific item, i.e., data transactions. The Special Master’s recommended construction is proper and the court adopts it without modification.

## **J. Tenth Claim Construction Chart**

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
10	“time stamping a predetermined function” (#30)	‘013/1	not indefinite applying at least the time to a predetermined function

Both Maxim and the OPs object to the Special Master’s recommended construction of this term, but only by reference to their original claim construction briefing. (ECF Nos. 704-1 and 715 at 8.) The OPs argued that this term was indefinite because “predetermined functions” are software programs and software programs cannot be time stamped. (ECF No. 642 at 66-68.) Maxim contended that “predetermined functions” are the functions performed by or results of executing the software, not the software itself. (ECF No.

651 at 16.) The Special Master found that the OPs’ argument “does not conform to the claims and is not mandated by the specification.” (ECF No. 691 at 59.) The court agrees. The OPs’ argument that “predetermined function” is synonymous with software program is unsupported, and illogical; functions are performed by software, they are not the software itself. Once that argument is rejected, the construction of this term follows from the court’s prior construction of the terms “time stamp” and “time stamping data transactions.” The court adopts the Special Master’s recommended construction without modification.

#### K. Eleventh and Twelfth Claim Construction Charts

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
11	“transaction program” (#32)	‘013/9&11	a series of instructions, ( <b>list of objects</b> ), to be carried out as part of a transaction

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
12	“transaction script” (#33)	‘095/1	a series of instructions, ( <b>list of objects</b> ), to be carried out as part of a transaction

The OPs object to the Special Master’s recommended construction of these terms, and include substantive briefing on this objection, (ECF No. 704 at 19-21), to which Maxim responds (ECF No. 715 at 22-24). The OPs contend that the patentees acted as their own lexicographer with respect to these terms, and Maxim counters that the allegedly definitional language is directed only toward “exemplary implementation details,” and not the general meaning of the terms themselves. (*Id.*) The parties agree that the two terms are to be given the same meaning. (ECF No. 691 at 61.)

The court concurs that the context in which the purported definition of “transaction script” appears, and the precise language used in the patent, does not indicate that the patentees acted as their own lexicographer because some of the cited language is definitional, while some of it is functional and explanatory. (ECF No. 691 at 62; ECF No. 610 at JX-9, 18:8-18.) With an aim toward arriving at a definition of the term that includes all the definitional language of the patent, excludes the functional language, and will be understandable and meaningful to a jury, the court adopts the Special Master’s recommended construction, with minor modification, noted in bold typeface for ease of reference only, in the above individual claim construction chart.

#### **L. Thirteenth Claim Construction Chart**

<b>R&amp;R#</b>	<b>Term (Chart #)</b>	<b>Patent/Claim</b>	<b>Construction</b>
13	“transaction group” (#31)	‘013/11	A set of objects that are defined by a service provider

The OPs object to the Special Master’s recommended construction of this term, but only by reference to their prior claim construction briefing. (ECF No. 704-1.) The dispute is whether the sentence following the recommended construction which states “[t]hese objects include both data objects (encryption keys, transaction counts, money amounts, date/time stamps, etc.) and transaction scripts which specify how to combine the data objects in useful ways” must be included as part of the construction of this term. (ECF No. 610 at JX-7, 3:56-64.) The court agrees with the Special Master that it need not, and agrees that the court need not look beyond the language of the claims themselves to reach this result. (ECF No. 691 at 63-64.) Claim 11 of the ‘013 Patent states “... wherein said transaction group can comprise a transaction [script] created by a service provider.” (ECF No. 610 at JX-7, 32:1-5.) This dependent claim

would be meaningless if transaction groups, by definition, included transaction scripts. The court agrees with the Special Master that the sentence following the recommended construction, set forth immediately above, is exemplary and not definitional. (ECF No. 691 at 64.) The court adopts the recommended construction without modification.

#### **M. Fourteenth Claim Construction Chart**

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
14	“store a transaction script, the transaction script including at least a representation of the time stamp generated by the timing circuit” (#26)	‘095/1	not indefinite no construction required

The OPs object to the Special Master’s recommended construction of this term, but only by reference to their prior claim construction briefing. (ECF No. 704-1.) The Special Master rejected the OPs’ argument that this claim term was indefinite. The OPs contend that the term is indefinite because: (1) the specification does not disclose or explain its meaning; (2) the asserted claim is internally irreconcilable; and (3) users cannot create transaction scripts. (ECF No. 641 at 68-70.) In opposition, Maxim argues that several embodiments render the term understandable by reciting various examples of transaction scripts that include a “representation” of the time stamp. (ECF No. 634 at 59.)

As with the OPs’ indefiniteness argument regarding “time stamping a predetermined function,” their foundational interpretation of the claim and specification language, which allegedly renders the claim indefinite, is erroneous. The claim contemplates a script that includes a “representation of the time stamp” and not that the script itself be time stamped, as the OPs contend. Maxim presented numerous examples from the specification that reflect operation of the properly interpreted requirement. (ECF No. 634 at 59.) The OPs cannot

meet the “exacting standard” to prove by clear and convincing evidence that one of ordinary skill in the relevant art could not discern the boundaries of the claim based upon the claim language, the specification, the prosecution history, and the knowledge in the relevant art. Halliburton, 514 F.3d at 1249-50. Properly read in the context of the specification, the claim is “amenable to construction” and is not “insolubly ambiguous.” Datamize, 417 F.3d at 1347. The OPs’ arguments to the contrary are not supported by any evidence, beyond counsel’s arguments, and are based upon a fundamental misapprehension of what the claim states. The court agrees with and adopts the Special Master’s analysis on this issue. This term is not indefinite, and requires no further construction.

#### **N. Fifteenth Claim Construction Chart**

<b>R&amp;R#</b>	<b>Term (Chart #)</b>	<b>Patent/Claim</b>	<b>Construction</b>
15	“said combination of said portable module reader and said secure microcontroller performing secure data transfers with said first portable module” (#24)	‘510/1	not indefinite no construction required

The OPs object to the Special Master’s conclusion that this term is not indefinite for mixing apparatus and method claim limitations under the authority of IPXL Holdings, LLC v. Amazon, Inc., 430 F.3d 1377 (Fed. Cir. 2005). This objection was fully briefed, (ECF Nos. 704 at 11-14 and 715 at 15-17), and argued at both the September and November Hearings. As stated immediately above, the indefiniteness standard is “exacting” and requires proof by clear and convincing evidence. Halliburton, 514 F.3d at 1249-50. The ’510 Patent is presumed to be valid. 35 U.S.C. § 282. Given these presumptions and the burden of proof, Maxim is correct that the OPs’ failure to produce any expert evidence indicating how the claim would, or would not,

be understood by one of ordinary skill in the art in response to Maxim's expert testimony on that issue is significant, and arguably dispositive. (ECF No. 715 at 15-16.)

Nevertheless, the court considered the controlling precedent of the Court of Appeals of the Federal Circuit with an aim to determining how it would apply to the precise claim language at issue in this case. These authorities demonstrate that the concern in "mixed claims" cases is whether a person of ordinary skill in the art could understand whether infringement occurs when a system is created or when it is used. IPXL, 430 F.3d at 1384. It is impossible to answer that question by comparing the words used in the asserted patents, with the words used in a patent considered in a decision issued by the court of appeals. Instead, these are highly fact-specific determinations, and this court can discern no bright-line rule regarding permissible language as opposed to impermissible language from the court of appeals' body of precedent. Compare Rembrandt Data Technologies, LP v. AOL, LLC, 641 F.3d 1331 (Fed. Cir. 2011) (claim invalid where last element of apparatus claim was "transmitting the trellis encoded frames"), and IPXL, 430 F.3d at 1384 (claim depending from an apparatus claim and adding the claim limitation that "the user uses the input means" deemed to be indefinite), with HTC Corp. v. IPCOM GMBH & Co., 667 F.3d 1270 (Fed. Cir. 2012) (claim was not indefinite, even though apparatus claim included terms such as "storing" and "holding," because these terms described a particular network environment and it was clear that infringement occurred when "the claimed apparatus: the mobile station" was made, used or sold), and Microprocessor Enhancement Corp. v. Texas Instruments Inc., 520 F.3d 1367, 1374-75 (Fed. Cir. 2008) (claim not indefinite because an apparatus claim that included the phrase "performing a boolean algebraic evaluation" spoke only to a structure "capable of performing the recited functions").

The Special Master explained why, read in the context of the specification and claims of the ‘510 Patent, it would be understood by a person of ordinary skill in the art that infringement of the ‘510 Patent occurred when a system capable of performing secure data transfers was created. (ECF No. 691 at 72-73.) The court concurs that the claim is directed to the creation of a system, made up of various parts that are combined for a particular purpose, i.e. secure data transfers. It would be readily apparent to a person of ordinary skill in the art that creation of a system with the required parts and the referenced capabilities would result in infringement, and that actual performance of the purpose for which the system was built is unnecessary. The claim’s inclusion of the word “performing” describes the capabilities of the system, once it is built; it does not indicate that the built system must actually be used. Again, given the fact-sensitive nature of a court’s determination of this issue, the OPs’ failure to produce evidence demonstrating how a person of ordinary skill in the art would understand the claims is problematic. For all these reasons, the court agrees with the Special Master and finds that the OPs failed to prove, by clear and convincing evidence, that the claim is indefinite for mixing apparatus and method claim limitations.

#### O. Sixteenth Claim Construction Chart

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
16	“responsive to a verification signal from said electronic device” (#23)	‘095/1	<b>not indefinite</b>  <b>in response to a signal from said electronic device that can be verified as authentic</b>

The Special Master found this term to be indefinite, and claim 1 of the ‘095 Patent to be invalid. Maxim objects to this conclusion, (ECF No. 705 at 2-8), and the OPs argue in support of this court’s adoption of the Special Master’s finding (ECF No. 714). The court heard



oral argument on this term at the November Hearing. As summarized above, the burden is on the OPs to prove, by clear and convincing evidence, that the term is insolubly ambiguous and incapable of being given any reasonable meaning. Biosig Instruments, Inc. v. Nautilus, Inc., 715 F.3d 891, 901-02 (Fed. Cir. 2013); Young, 492 F.3d at 1346. Close questions of indefiniteness must be resolved in favor of the patentee. Bancorp Services, LLC v. Hartford Life Ins. Co., 359 F.3d 1367, 1372 (Fed. Cir. 2004).

The Special Master found this term to be indefinite because the verification signal is “typically” contained in the certificate, which is separately claimed and not linked to the “verification signal,” and because the recited “adjustment” is made in response to the “compare and check” operations, not in response to the signal originating from the “electronic device,” as required by the claims. (ECF No. 691 at 75-78.) The Special Master’s conclusions are well-reasoned and supported by the record. So too, however, are Maxim’s responsive positions.

Maxim convincingly cites to the language of the patent itself indicating that the “certificate” claimed earlier in claim 1 is different from the “verification signal.” (ECF No. 705 at 8.) With respect to the Special Master’s second justification, Maxim explains that the term “verification signal” can be afforded a reasonable interpretation if it is understood to be a signal that is capable of being verified, resulting in adjustments being made *indirectly* or *ultimately* in response thereto. (ECF No. 705 at 5-7; ECF No. 610 at JX-9, 14:30-35, figs. 8 & 10.) Maxim’s argument that the information provided from the merchant or service provider side of the transaction in figures 8 and 10 is what allows the “compare and check” operations to proceed, and adjustment to ultimately take place, is convincing. (ECF No. 705 at 7.) Both experts opined in support of the position advanced by the party by whom they were retained. The OPs’ expert,

however, did not opine that a person of ordinary skill in the art would understand “responsive” to mean only *immediately* or *directly* responsive.

When the evidence is such that reasonable persons can disagree, this court is constrained to issue a construction that preserves the validity of the claim. Biosig, 715 F.3d at 901-02; Bancorp, 359 F.3d at 1372. The court need not “rewrite” the claims of the patent to reach this conclusion; rather, the intrinsic record aptly supports Maxim’s position. This court is required by controlling precedent to reject the Special Master’s recommendation and issue a construction of the term “verification signal.”

#### **P. Seventeenth Claim Construction Chart**

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
17	“substantially unique electronically readable identification number” (#27)	‘510/1	an electronically readable number that is sufficiently unique to identify the portable module from any other portable module

The OPs object to the Special Master’s conclusion that this term is not indefinite. (ECF No. 704 at 8-11.) Maxim responds to the OPs’ position, (ECF No. 715 at 12-14), and this objection was argued at the November Hearing. The Special Master concluded that the specification of the ‘510 Patent provides criteria for one skilled in the art to determine if an identification number is substantially unique. (ECF No. 691 at 81.) The court concurs and adopts the Special Master’s recommended claim construction without modification.

When a word of degree is used, a court must decide whether the patent provides “some standard for measuring that degree.” Biosig, 715 F.3 at 898. In this instance, the ‘510 Patent claims a “first portable module comprising...a substantially unique electronically readable identification number.” (ECF No. 610 at JX-3, 24:9-10.) The specification explains that the

portable module may have a number that “uniquely identifies the portable module from any other portable module.” (Id., 4:7-9.) In this context, it is clear that “substantially” unique is unique enough to distinguish one portable module from another portable module, making the term definite. The Court of Appeals for the Federal Circuit’s decision in Exxon Research and Engineering Co. v. United States, 265 F.3d 1371 (Fed. Cir. 2001), provides significant guidance on this question. In that case, the court considered whether the term “substantial absence of slug flow” was indefinite. Exxon, 265 F.3d at 1380-81. The specification explained that slug flow should be avoided because it could interfere with reactor operations. Id. at 1381. The court concluded that the term was not indefinite because one of ordinary skill in the art would understand that “[w]hether there is a ‘substantial absence of slug flow’ therefore can be determined with reference to whether reactor efficiency is materially affected.” Id. Similarly, the ‘510 Patent teaches that the identification number must be unique because it must distinguish one portable module from another portable module. (ECF No. 610 at JX-3, 4:7-9.) Whether an identification number is “substantially unique” therefore can be determined with reference to whether the number can distinguish one module from another. The patent’s inclusion of the word “substantially” provides for the possibility that this determination may differ depending on the number of modules in existence, and any other identifying features of them, such as, for example, country codes, manufacturer details, or model numbers.

The OPs made no sustainable argument, and certainly presented no clear and convincing evidence, that the patent provides no standard for measuring the degree of uniqueness such that a person of ordinary skill in the art would be unable to determine if an identification number was “substantially unique” or not. The claim term amenable to construction and is, thus, not indefinite.

#### Q. Eighteenth Claim Construction Chart

<b>R&amp;R#</b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
18	“certificate” (#3)	‘095/1	an electronic document that has indicia to attest that it is authentic
18	“signed certificate” (#40)	‘702/1	an encrypted certificate

A subset of the OPs, the Joining Parties (“JPs”), filed independent claim construction briefing with respect to the term “certificate” in which they proposed that the term be construed to mean “an electronic document equivalent to cash.” (ECF No. 680.) The JPs object to the Special Master’s recommended construction because it fails to include this notion of cash equivalency. (ECF No. 713.) Maxim responds to the JPs’ objections. (ECF No. 718.) The OPs originally proposed a different construction, and also object to the Special Master’s recommended construction of both “certificate” and “signed certificate,” but only by way of reference to their previous briefing. (ECF No. 704-1.)

The court reviewed the R&R, the original claim construction briefing, and the objection briefing and failed to identify any error or omission in the Special Master’s analysis and conclusion. The JPs’ cash-equivalency arguments and positions are based upon specification language that is directed to particular embodiments of the invention, (ECF No. 713 at 2), whereas the file history and remainder of the patent indicate that the ‘095 Patent is not limited to cash transactions, (ECF No. 610 at JX-2, 244MAX001382; JX-9, 1:27-28). The term “certificate” is used in reference to many embodiments of the ‘095 Patent, several of which do not involve money, including the Software Authorization embodiment, for example. Therefore, the JPs’ arguments are contradicted by the specification, and cannot be correct. The certificate is not a cash equivalent. The Special Master’s recommended construction is adopted without modification.

## R. Nineteenth Claim Construction Chart

<b>R&amp;R#</b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
19	“challenge number” (#4)	‘095/1	<b>in challenge/response mode, a random number that is sent to another party, which party is challenged to return that random number as part of its response</b>

The Special Master recommended that this term be construed to mean “a random number that is sent from a first party and received by a second party, the random number allowing the second party to indicate authenticity of the response by including the random number in response.” (ECF No. 691 at 90-91.) Maxim objects to the Special Master’s recommended construction of this term, but only by way of reference to its prior briefing. (ECF No. 705 at 8.) The OPs do not object to the Special Master’s recommended construction. In its original claim construction briefing, Maxim proposed that this term be construed to mean “a random number used to authenticate a message.” (ECF No. 634 at 30-32.) The OPs originally proposed that additional details be added to the definition to indicate what the challenge number is used for and who sends and receives it. (ECF No. 642 at 36-39.) The Special Master’s recommended construction adopts neither proposal, but more closely reflects the OPs’ suggestion.

The specification of the ‘095 Patent defines explicitly what a challenge number is and what purpose it serves: “[a] random number is sent and used in challenge/response mode. The other party is challenged to return the random number as part of their response.” (ECF No. 610 at JX-9, 8:28-34.) Because the ‘095 Patent defines this term, informing the jury of the definition the patentees chose to use is preferred. The court adopts the Special Master’s

reasoning in interpreting this term, but modifies the language to conform to the words used in the patent itself.

#### **S. Twentieth Claim Construction Chart**

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
20	“storing” (#25)	‘510/1 ‘095/1&5 ‘013/9	no construction required
20	“store” (#25)	‘095/1	no construction required

The OPs object to the Special Master’s failure to construe these terms, but only by way of reference to their prior claim construction briefing. (ECF No. 704-1.) Maxim does not object. The OPs contend that short-term memory does not qualify as “storing” and that the terms should be construed to mean saving only in long-term memory. As the Special Master correctly articulated, this argument is contradicted by the specification, and illogical when inserted into the claims. (ECF No. 691 at 91-93.) Against these facts, the OPs cited to no intrinsic evidence to indicate that saving something in short-term memory cannot be “storing.”<sup>8</sup>

The court agrees that, as a matter of claim construction, no definition of these terms is required.

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<sup>8</sup> If a party at trial argues contrary to this analysis, the jury should be instructed that the terms “storing” and “store” are not limited to saving items in long-term memory.

#### **T. Twenty-First Claim Construction Chart**

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
21	“adjust said first data object according to said second data object” (#1)	‘095/1	no construction required

The OPs object to the Special Master’s failure to construe this term, but only by way of reference to their prior claim construction briefing. (ECF No. 704-1.) Maxim does not object. The original dispute between the parties was whether the term “adjust” is limited to adding and subtracting operations. The Special Master concluded that the OPs’ argument was inconsequential because it was based upon “adjusting” the clock offset, while the claim term in dispute speaks to adjusting the “first data object.” (ECF No. 691 at 94-95.) The court agrees. The court considered each of the OPs’ citations to the various instances where the patent refers to “adding” or “subtracting,” (ECF No. 642 at 22), but concludes that none of them demonstrate that the patentees assigned any special meaning to the word “adjust” in the ‘095 Patent. The OPs fail to establish that “adjust” is assigned anything other than its plain meaning in the ‘095 Patent for purposes of claim construction.

The jury will not need any further definition of this word. The court agrees with the Special Master’s reasoning and conclusion with respect to this term, and adopts them without modification.

#### U. Twenty-Second Claim Construction Chart

<b>R&amp;R#</b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
22	“passing” (#20)	‘880/1	no construction required

The OPs object to the Special Master’s failure to construe this term, but only by way of reference to their prior claim construction briefing. (ECF No. 704-1.) Maxim does not object. The OPs argue that the term “passing” should be interpreted to mean “transferring” because the specification uses that word instead of the word “passing.” (ECF No. 642 at 22-23.) Although the OPs are correct on this point, inserting the word “transferring” in the claim in place of “passing” is meaningless. As the Special Master noted, Maxim and the OPs agreed at the September Hearing that “transferring does not mandate deleting and storing.”<sup>9</sup> (ECF No. 691 at 96.) As this was the real dispute between the parties, replacing the word “passing” with “transferring” would provide no further guidance to a jury.

The word “passing” is easily understood by a layperson, and the jury will be well-equipped to apply the meaning of that term in the context of the claims. The OPs provided no justification for assigning any special meaning to the term beyond the plain meaning, and adoption of the OPs’ suggestion, i.e., transferring, would serve no purpose under the circumstances. The court agrees with the Special Master’s reasoning and conclusion with respect to this term, and adopts them without modification.

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<sup>9</sup> If a party at trial argues contrary to this stipulation, the jury should be instructed that deleting and storing is not required.



## V. Twenty-Third Claim Construction Chart

<b>R&amp;R#</b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
23	“packet” (#39)	‘510/3	block of information

Although Maxim filed a supplemental claim construction brief with respect to this term following the September Hearing, it does not object to the Special Master’s recommended construction. (ECF No. 687.) S/G<sup>10</sup> object, but only by way of reference to their prior claim construction briefing. (ECF No. 704-1.) Notably, the recommended construction asserted in S/G’s original claim construction briefing differed from the position they advanced at the September Hearing. (ECF No. 691 at 97.) Both proposed constructions included details regarding the creation or use of the “packet.” As the Special Master correctly found, however, such details appear in the language of the claims themselves, and need not be included as part of the definition of the word. (ECF No. 691 at 99.) The court agrees with the Special Master’s reasoning and conclusion with respect to this term, and adopts them without modification.

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<sup>10</sup> Because Maxim only asserts the ‘702 Patent against certain OPs, i.e., Starbucks and Groupon, objections to the Special Master’s recommended construction of the terms in that patent were only made by those two parties, hereinafter referred to as “S/G.”

#### W. Twenty-Fourth Claim Construction Chart

<b>R&amp;R#</b>	<b>Term (Chart #)</b>	<b>Patent/Claim</b>	<b>Construction</b>
24	“money register” (#43)	‘702/1	an object that is used to represent money or some other form of credit

S/G object to the Special Master’s recommended construction of this term, but only by reference to their prior claim construction briefing. (ECF No. 704-1.) Maxim objects, but also only by reference to its original claim construction briefing. (ECF No. 705 at 8.) The disputes addressed by the Special Master were whether a “money register” must be: (a) inherently locked; and (b) limited to a “digital cash value.” (ECF Nos. 634 at 80-81 and 642 at 78-79.) The ‘702 Patent explicitly defines the “money register” as an object that may be used to represent money or some other form of credit, and further explains the necessity of locking the “money register” once it is created. (ECF No. 610 at JX-1, 18:13-21.) This specification language alone resolves the disputes presented by the parties. The patent states the importance of locking a “money register” after it is created, indicating that a “money register” is not inherently locked. (*Id.*) Also, the patent explains that the “money register” represents money “or some other form of credit,” contradicting the OPs’ contention that the money register must contain a “digital cash value.” (*Id.*)

The court agrees with the Special Master’s reasoning and conclusion with respect to this term, and adopts them without modification.

## **X. Twenty-Fifth Claim Construction Chart**

<b>R&amp;R#</b>	<b>Term (Chart #)</b>	<b>Patent/Claim</b>	<b>Construction</b>
25(a)	“amount requested” (#37)	‘702/1	no construction required
25(b)	“decrypted amount requested” (#41)	‘702/1	a decrypted version of the amount requested

S/G object to the Special Master’s failure to construe the first term, but only by reference to their prior claim construction briefing. (ECF No. 704-1.) S/G do not object to the Special Master’s recommended construction of the second term. Maxim does not object to either of the Special Master’s recommendations, and agreed to the Special Master’s provisional construction of the latter term at the September Hearing. (ECF No. 709 at 174-75.) The original dispute with respect to the term “amount requested” was whether a money equivalent limitation should be included. The Special Master addressed this argument in the context of the term “money register,” which analysis the court adopted. The specification of the ‘702 Patent explicitly contradicts any requirement that the “money register” be limited to digital cash by referencing explicitly “other forms of credit.” (e.g., ECF No. 610 at JX-1, 18:13-21.) Once this dispute is resolved, no construction of the term “amount requested” is required, and the “decrypted amount requested” is self-defining, as set forth by the Special Master. The court agrees with the Special Master’s reasoning and conclusion with respect to these terms, and adopts them without modification.

#### Y. Twenty-Sixth Claim Construction Chart

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
26	“adding said decrypted amount requested to a money register” (#42)	‘702/1	increasing the amount of a money register by the decrypted amount requested

S/G object to the Special Master’s recommended construction of this term, but only by way of reference to their prior claim construction briefing. (ECF No. 704-1.) Maxim does not object. The original dispute between the parties was whether a summing of two numbers was required, or whether, instead, increasing a value or balance would suffice. The terms “decrypted amount requested” and “money register” were previously construed, which means that the only term possibly in need of construction is the word “adding.” S/G contend that “adding” must be limited to performing the mathematical operation of summing two numbers together. (ECF No. 642 at 76-78.) The Special Master found that this limitation is not called for by the claims. (ECF No. 691 at 104.) The court agrees.

The Special Master’s recommended construction reflects that “adding,” in this context, refers to increasing the value or balance of an account, and not necessarily to executing a mathematical operation. The court adopts the Special Master’s recommended construction without modification.

#### Z. Twenty-Seventh Claim Construction Chart

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
27	“placing the module in communication with the electronic device” (#36)	‘702/1	no construction required

S/G object to the Special Master’s failure to construe this term, but only by reference to their prior claim construction briefing. (ECF No. 704-1.) Maxim does not object.

S/G contend that the term should be limited to user-initiated communication between the module and the electronic device. (ECF No. 642 at 71.) The Special Master gave full consideration to S/G’s arguments, reviewed the specification and claims, and concluded that the method claim of the ‘702 Patent does not specify which entity must perform any particular step. (ECF No. 691 at 106.) The court reaches the same conclusion. The court agrees with the Special Master that the term is not limited to user-initiated communication, and requires no further construction once that dispute is resolved.

**AA. Twenty-Eighth Claim Construction Chart**

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
28	“microcontroller core” (#17)	‘510/1 ‘013/1&9	a processor unit contained within a microcontroller

The OPs object to the Special Master’s recommended construction of this term, but only by reference to their prior claim construction briefing. (ECF No. 704-2.) Maxim does not object. The OPs contend that the microcontroller core must be limited to a central processing unit (“CPU”). The Special Master concluded that the OPs did not support that position, and that even some of their own extrinsic evidence contradicted it. (ECF No. 691 at 106-07.) The OPs cite to a dictionary and to the testimony of Maxim’s expert in support of their argument that a microcontroller always contains a CPU. (ECF No. 642 at 55.) The court reviewed the testimony of Maxim’s expert and does not consider it to support the OPs’ contention. (ECF No. 642-27.) The expert never spoke specifically to CPUs in the portions of the deposition cited by the OPs, (Id. at 25:22-25, 30:12-19), and the entirety of the expert’s testimony supports the conclusion reached by the Special Master. The court adopts the Special Master’s recommended construction without modification.

**BB. Twenty-Ninth Claim Construction Chart**

<b><u>R&amp;R#</u></b>	<b><u>Term (Chart #)</u></b>	<b><u>Patent/Claim</u></b>	<b><u>Construction</u></b>
29	"monetary equivalent" (#35)	'702/1	no construction required, but a limitation

Maxim objects to the Special Master's failure to construe this term, but only by reference to its prior claim construction briefing. (ECF No. 705 at 8.) S/G do not object. The parties agree that the term need not be construed, but disagree whether the term, being located in the preamble, is a limitation or not. The Special Master concluded that the term provided antecedent basis to "electronic module" and was, therefore, a limitation. (ECF No. 691 at 108-09.) The court can identify no error in that conclusion and adopts it, without modification.

For the reasons set forth above, the Special Master's Report and Recommendation, (ECF No. 691), will be adopted, except to the extent noted otherwise. All disputed claim terms shall be construed in accordance with the order of this court filed contemporaneously with this memorandum opinion.

Dated: December 17, 2013

BY THE COURT,

/s/ JOY FLOWERS CONTI

Joy Flowers Conti

Chief United States District Judge